

THE ROLE OF LOCAL MUSEUMS IN TAXONOMIC SUPPORT

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INTRODUCTION

Taxonomic problems are often cited as an obstacle to the use of invertebrate groups for site evaluation and environmental monitoring. These problems vary from group to group. For some groups, Protozoa being an example, a large proportion of species are undescribed and a major basic taxonomic research programme is required (Clark, 1976). However the British fauna of most macro-invertebrate groups is much better known and the taxonomy of most groups has progressed beyond the descriptive phase. Recent progress has been either nomenclatural or involved the splitting of a relatively small number of closely related species (see, for example, Foster this conference). The main problems with the use of macro-invertebrate groups relate to lack of accessible identification keys and shortage of invertebrate specialists with the necessary knowledge of sampling methods or identification skills.

Unfortunately, the popularity of taxonomy has undoubtedly declined and it is now sometimes regarded as old-fashioned and in the case of invertebrates tediously difficult. Heppel (1979) noted that in zoology there has been a trend away from taxonomy and a lack of awareness of its importance to other types of zoological work, but points out that scientific work can be rendered irrelevant if its taxonomy is inaccurate or imprecise. The failure to appreciate the importance of taxonomy to ecological and environmental studies is a threat to our abilities to understand the environmental changes which are becoming increasingly apparent and which are currently giving cause for public concern.

The prominent role of the national and university museums in pure taxonomic research is widely acknowledged (Smith, 1979). Less well understood is the taxonomic support provided by local museums, which are run mainly by local authorities. It is in the field of applied taxonomy, rather than pure taxonomic research, that local museums have traditionally operated and it is in this area that they have most to offer in the future.

INVERTEBRATE STUDIES AT LEICESTER MUSEUM

Local authority museums first appeared following the 1845 Museums Act which allowed municipalities to levy a half-penny rate to run museums for 'the instruction and amusement' of the public. However, many of them have their origins in literary and philosophical societies and similar organizations which appeared in the early 19th century. From the start, local museums were involved with the increasing interest in local faunas which formed the basis of many notes published in new journals such as the *Zoologist* and the *Entomologist*.

At various times in its history the museum at Leicester has played an important part in encouraging and enabling local naturalists to study natural history. In the 1840s, Leicester Museum was associated with developing the interests of the young Henry Walter Bates who befriended the curator John Plant. Bates left school at 13, but continued his studies at the Mechanic's Institute whilst working from 7.00 am to 8.00 pm each day as a hosiery apprentice. At 17, Bates began to study the local beetles before embarking on his famous voyage to the Amazon with Alfred Wallace (Moon, 1976).

Entomologists from a variety of social origins continued to use the resources at the museum in order to pursue their interest. In 1875, 'Mr G. Robson, the artisan Naturalist has undertaken to study and collect the Water-Beetles, and the Society has supplied him with apparatus for the purpose' (Mott, 1876). At the same time, Mr T. Burberry Forrest, a gentleman from a quite different walk of life, was engaged in the rearrangement of the Coleoptera collections. In the 1890s, the museum was associated with the resurgent entomological activity at Leicester and most of the 19th century material in the present museum collections date from this time.

For much of the 20th century, there has been no entomological society in Leicestershire and the museum became the place where budding entomologists met the previous generation and first had their enthusiasms kindled. In the 1950s, the museum started to act as a local biological records centre and formation of the County Lepidoptera recording scheme in 1975, by Don Hall-Smith, stimulated a major increase in local recording and interest. The Leicestershire Entomological Society was formed in 1988 and the museum has provided support for meetings and publications.

The involvement of Leicester Museum in local invertebrate studies is not unique; greater activity can be found in the histories of some other local museums. The main efforts of the museum at Leicester have often been directed towards the study of plants and vertebrates. Local museums have provided a vital service, especially to amateur natural historians who have played such an important role in the study of invertebrates.

TAXONOMIC SERVICES AT LOCAL MUSEUMS

The services provided by local museums include the use of equipment and libraries, publishing, and support for local societies, but perhaps the two museum resources of most value are the collections and staff expertise. A high proportion of most invertebrate museum collections come from local amateur collectors. Consequently, they constitute a valuable store of historical records. Comparison with modern records can suggest faunal changes. They also act as vouchers for records published by the collectors. The most frequent use of invertebrate collections however is as reference material. Identification of specimens is more likely to be correct when they are compared with reliably named material than when they are identified using only keys: this is especially true for those inexperienced in identification.

Staff expertise is a museum resource which is easy to overlook. However, individual staff with an infective enthusiasm can have a dynamic effect on the local scene. There are many active invertebrate specialists, both professional and amateur, whose interests were first encouraged and then sustained during visits to the local museum. The role of museums in developing the taxonomic skills of young specialists is especially valuable given the decreasing component of taxonomy in university curricula.

MUSEUMS IN CRISIS

Local authority services have come under increasing financial pressure in the last decade. To justify their expenditure, museums are now required to demonstrate the relevance of their services to the public in increasingly rigorous ways. Cuts in budgets have been suffered in recent years by almost all museums with natural history collections.

The taxonomic services provided by local museums has never enjoyed a high public profile. With the exception of public health enquiries, it is undoubtedly true that these services are often under-used. It is unfortunate that many invertebrate collections of value for taxonomic services are not very useful for these museum functions, such as display, which have a broader and more direct public appeal.

Consequently local natural history museums are facing a crisis especially with respect to the provision of taxonomic services. According to a survey in 1983 (Williams, 1987), of the 127 museums in the UK with natural history collections only 64 employed full-time specialist staff and only 49 were not constricted by staffing in providing an effective

service. On this basis over half of all British natural history museums are unable to provide an effective taxonomic service.

POTENTIAL FOR THE FUTURE

Natural history departments at local museums have responded to these pressures by taking on functions beyond their traditional roles. In the field of taxonomy this has involved two main initiatives, both based upon the development of local biological records centres at museums. The emergence of government training schemes in the 1980s gave the opportunity to employ young people to conduct biological surveys and to computerize the data form. This resulted in a spate of local atlases showing the local species distributions of a wide range of taxonomic groups. At the same time local site-based data-banks were set up and these have evolved into operations giving ecological advice to planning departments. In a similar vein museums are working with conservation organizations on site evaluations and management prescriptions. In recent years, Leicestershire Museums Service has undertaken work, using invertebrates, to monitor the effects of engineering works on a local river system, to monitor grasslands restored after open-case mining, to evaluate numerous sites subject to development proposals and to review the conservation interest of local sites within several habitat categories.

Many museums have now built up a valuable distributional and ecological data-base to complement their taxonomic resources. There is now abundant potential for an increase in their use by environmental and educational organizations. If your local museum provides a taxonomic service then one can only say 'use it or lose it'.

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